bank of the river - deep, near the convex - shallow, there is a beach. Secondly, here and on other sites in the surface of the sand there are two steps. It is similar to the bottom of the riverbed and the flood plain. Third, at the bottom of the mud on the former floodplain, features similar to buried soils are encountered. And peat layers are encountered in two places. This indicates a long period of subaerial development (i.e., in the open air, not under water), which would not be possible if the large proglacial lake is simply drying up.

Thus, after the melting of the glacier in the place of Seliger the river flowed, apparently inheriting the ancient (before glaciation) river valley. Then, for unknown reasons, the flow stopped and the valley was flooded. On the sites studied, the water level rose by 5-8 meters. The reasons for this phenomenon remain to be determined.

This research was supported by the project of the Russian Science Foundation 17-17-01289.

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PRELIMINARY RESULTS OF POLLEN STUDY FROM LAKE IMANDRA SEDIMENTS

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The Arctic landscapes are highly sensitive to climate variations. Therefore, it is an important region for understanding present and past climate changes. Lake sediments are a good source of information for studying permanent environmental changes. Territory of Lake Imandra was covered by Arctic Ice Sheet during the Late Pleistocene. Studying lake sediments on this polygon can help in the reconstruction of lateglacial and postglacial conditions. Pollen analysis provides information about local and regional vegetation climate changes.

The two cores of bottom sediments were collected during joint field campaign of the Saint-Petersburg State University, Kola science centre and University of Cologne in September of 2017. The total trickiness of core is about 8.5 m. At the present time the samples from corecatchers have studied by pollen analysis. The 26 samples with variable interval (from 2-5 cm to 50 cm) were analyzed. The 58 pollen, spores and non pollen palynomorph taxa were indentified.

Three pollen zones were distinguished according to changes in pollen spectra. The first zone (PZ-1) from 8.5 m to 7.0 m shows low concentrations of microfossils. The single grains of *Betula nana*, Cyperaceae, Chenopodiaceae, Ericaceae, Polypodiaceae, *Sphagnum* and *Lycopodium* taxa were indentified. Such low concentration may indicate cold and dry conditions. The second zone (PZ-2) from 7.0 m to 4.7 m shows domination of trees and shrub pollen taxa (65%). *Betula nana* is prevailed in this group. The herbs pollen taxa are presented by *Artemisia*, Chenopodiaceae, Ericaceae, Cyperaceae and Poaceae. The single grain of *Ephedra* pollen was identified in this zone.

Polypodiaceae is dominated among spores. That pollen spectra may reflects dry conditions, when shrub tundra landscapes with periglacial vegetation communities were dominated. The third zone (PZ-3) from 4.7 m to 0.8 m is characterized by the highest concentration of pollen and spores and amount of pollen and spores taxa diversity. Increasing of trees and shrub pollen taxa up to 90% is fixed there. *Pinus s/g Diploxylon* is dominated among that taxa. Poaceae and Cyperaceae are dominated among herbs taxa. Polypodiaceae still dominates in spore group. The pollen spectra of PZ-3 probably reflect the most favorable conditions of Holocene. Summarize pollen results it is possible to conclude that excavated sediments formed during lateglacial and Holocene time. The work was supported by joint grant SPBU-DFG 18.65.39.2017

NORTH-SOUTH DISPERSION VECTOR IN POSTGLACIAL RECOLONIZATION OF EUROPE AND WESTERN SIBERIA IN MICROSCOPIC FRESHWATER CRUSTACEANS: SEARCH FOR EXPLANATIONS

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Cladocera is a very important group of the microscopic animals in continental water bodies (Forró et al., 2008) with a long and complicated evolutionary history (Van Damme, Kotov, 2016). They are well-known models of recent evolutionary biology. Their remains are widely used in the palaeoecological reconstructions (Van Damme, Kotov, 2016). Several genera of the Cladocera became to be models of studies of the invertebrate phylogeographic patterns in continental waters.

Pioneer phylogeographic works concerning the Cladocera have started at the end of the 20th century (Taylor et al., 1998). Recently a new level of such studies is achieved, now the authors try to analyse global phylogeographic patterns in contrast to previous works mainly focused on Europe or North America. Several trans-Eurasian studies were made by our team, with different collaborators. Such studies revealed in several cases (among other patterns) a peculiar pattern in the postglacial dispersion of the cladocerans in European Russia and Western Siberia: from particular northern regions to more southern regions (Xu et al., 2009; Kotov et al., 2016; Bekker et al., 2018). Such pattern is unusual keeping in the mind a great prevalence of the south-north direction in the postglacial recolonization of the Holarctic from southern refugia (Hewitt, 2000). The north-south dispersion was previously discussed only in few other animal groups. It is proposed that they have survived during Pleistocene glaciation cycles in some “cryptic northern refugia” (Stewart, Lister, 2001). In our poster we will try to find explanations of such pattern of recolonization in the Cladocera (Crustacea: Branchiopoda). Among possible explanations, there are hypotheses referring to an unusual hydrologic situation in Pleistocene. Namely, the Weichselian ice sheet was associated with huge proglacial lakes (ice-dammed lakes) whose drainage changed from south-north to a north-south direction (Mangerud et al., 2001; Astakhov, 2006). Such water movement may have enabled dispersal of cladocerans in a southern direction. Our data demonstrate that this region of proglacial lakes may have acted a source for recolonization. But other explanations are also possible.

The study is supported by the Russian Science Foundation (grant 18-14-00325).

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